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EXAMINER	
SMITH, CHAD	

ART UNIT	PAPER NUMBER
2874	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/565,152	MCNIE ET AL.	
	Examiner	Art Unit	
	Chad H. Smith	2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 June 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35,37-43 and 47-49* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-9,14-19,21,29,33-35 and 37-43* is/are allowed.

6)☒ Claim(s) *10-13,20,22-28,30-32 and 47-49* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments, see Remarks, filed 6/9/10, with respect to the rejection(s) of claim(s) 35 under U.S.C. 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Jenkins et al. (U.S. Patent # 5,410,625).

The indicated allowability of claims 10 and 20 is withdrawn in view of the newly discovered reference(s) to Jenkins et al. (U.S. Patent # 5,428,698) and Jenkins et al. (U.S. Patent # 5,410,625), respectively. Rejections based on the newly cited reference(s) follow.

Allowable Subject Matter

Claims 1 - 9, 14 - 19, 21, 29, 33 - 35, and 37 - 43 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

As pertaining to claims 1, and 29:

The prior art of record, taken alone or in combination, fails to disclose or render obvious: wherein said substrate comprises a silicon on insulator wafer, as Jenkins et al. (U.S. Patent # 5,410,625) teaches using silicon or alumina as the substrate material (col. 14, lines 55 - 57), but not an insulator material adjacent the silicon material. Furthermore, Umebayshi et al. (U.S. Patent # 6,944,377 B2) fails to teach a modulation means as defined by the applicant. As '377 only teaches a passive optical element, col. 4, line 65, which would not be an information modulating means as defined by Applicant's specification.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 10 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Jenkins et al. (U.S. Patent # 5,428,698).

In Re claim 10, '698 teaches a plurality of lasers (col. 8, line 10, lines 52 - 54), modulation means (36) for information modulating radiation output by each of said plurality of lasers, output means (28) for outputting the modulated radiation produced by the modulation means; and hollow core optical waveguides (20 and 24) formed in a substrate for guiding radiation from the plurality of lasers to the modulation means and from the modulation means to the output means.

In Re claim 11, '698 teaches wherein each of said plurality of lasers have a different output wavelength (wavelength is varied due to dispersion along the path and altered do to the modulators through which the signal passes).

Claims 22, 47 and 48 are rejected under 35 U.S.C. 102(b) as being anticipated by Jenkins et al. (U.S. Patent # 5,410,625).

In Re claims 22, 47 and 48, '625 teaches at least one laser (col. 13, line 65) for producing information modulated radiation; output means (transmitter) for coupling the radiation produced by the laser into at least one output optical fibre; and hollow core optical waveguides (110, 116, 112a, 112b) formed in a substrate for guiding radiation from the at least one laser to the at least one output optical fibre, wherein said modulation means comprises one or more electro-optic modulators (col. 17, lines 54 - 58), wherein the substrate comprises semiconductor material (col. 14, lines 55 and 56).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 23 - 28, 30, 31 and 49 are rejected under 35 U.S.C. 102(e) as being anticipated by Umebayashi et al. (U.S. Patent # 6,944,377 B2).

In Re claims 23 and 49, '377 teaches at least one hollow core optical waveguide (42) formed in a substrate (21, 31, 41); one or more detectors (51); and one or more optical fibre attachment means (11), the one or more optical fibre attachment means adapted to receive one or more optical fibres (fig. 1), wherein said radiation is guided from the one or more optical fibres to the one or more detectors by said at least one hollow core optical waveguide, said at least one hollow core waveguide guiding said radiation in two transverse directions (figs. 1 and 2),

wherein said substrate comprises a silicon on insulator (SOI) wafer (col. 9, lines 34 - 38, as Examiner interprets silicon substrate adjacent a glass substrate).

In Re claim 24, '377 teaches a plurality of detectors (51).

In Re claims 25 and 26, '377 teaches a plurality of optical fibre attachment means are provided to receive a plurality of optical fibres which guide radiation to the detectors (fig. 13, 14).

In Re claim 27, '377 teaches wherein one optical fibre attachment means is provided, said optical fibre attachment means being arranged to receive one optical fibre carrying radiation comprising a plurality of different wavelength channels (12).

In Re claim 28, '377 teaches further comprising wavelength demultiplexing means, said wavelength demultiplexing means being arranged to separate said different wavelength channels and to direct each wavelength channel to one of the plurality of detectors (fig. 5).

In Re claim 30, '377 teaches at least one wavelength selective filter (fig. 5).

In Re claim 31, '377 teaches a mode matching means, the lens, 15, as the reference does not state that the mode is altered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jenkins et al. (U.S. Patent # 5,428,698).

In Re claims 12 and 13, '698 teaches the apparatus of claim 10 as previously discussed above, and furthermore teaches wherein beam combining means (24) are additionally provided to combine the plurality of modulated beams into a combined beam wherein said output means is arranged to couple the combined beam (col. 7, lines21 - 24, table 1).

'698 is silent in this embodiment to outputting the signal into an output optical fibre.

Embodiment with respect to fig. 10 teaches that the optical fiber is placed at the output for routing to an optical communication network (col. 14, lines 24 - 26).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to attach an optical fiber at the output of one of 28a - 28d (or all of) so as to conveniently route the output signal to a remaining optical communication network.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jenkins et al. (U.S. Patent # 5,410,625).

'625 teaches one or more lasers, modulation means for information modulating radiation output by each of said one or more lasers, output means for outputting the modulated radiation produced by the modulation means; hollow core optical waveguides formed in a substrate for guiding radiation from the one or more lasers to the modulation means and from the modulation means to the output means; and one or more beam shaping means are provided.

'625 teaches a tapered solid waveguide, not a hollow waveguide, (fig. 15) for changing the length required to obtain a given splitting.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to taper the hollow core optical waveguide so as to change length required to obtain a given splitting.

Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Umebayashi et al. (U.S. Patent # 6,944,377 B2) in view of Nelson et al. (U.S. Patent # 3,984,332).

'377 teaches the apparatus of claim 23 as previously discussed above, but is silent to a lensed output optical fiber. '332 teaches a lensed output optical fiber (col. 4, lines 37 – 40). It

would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the previous combination with '322's teaching of a lensed output optical fiber to minimize dispersion.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chad H. Smith whose telephone number is (571) 270-1294. The examiner can normally be reached on Monday-Thursday 7:00 am - 4:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Uyen-Chau Le can be reached on 571-272-2397. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Chad H Smith/
Examiner, Art Unit 2874

/UYEN-CHAU N. LE/
Supervisory Patent Examiner, Art Unit 2874